UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MISSOURI
EASTERN DIVISION

GREGORY L. BURDESS and LISA BURDESS,	)	
Plaintiffs,	)	
v.	)	Case No. 4:17-CV-01515-JAR
COTTRELL, INC.,	)	
Defendant.	)	

MEMORANDUM AND ORDER

This matter is before the Court on Defendant's motion to exclude the testimony of Plaintiff's design expert Gerald Micklow in this product liability case. For the reasons discussed below, the motion will be granted in part and denied in part.

I. BACKGROUND

Plaintiff Gregory Burdess worked as a car hauler for 25 years, loading cars on trailers and transporting them throughout the country. Defendant Cottrell designs and manufactures the trailer at issue in this case. To secure cars on a trailer, Burdess operated a chain and ratchet system on the trailer requiring him to reach overhead and pull down a tie bar using significant force. Burdess performed this forceful overhead pull-down motion repetitively throughout his employment.

In April 2013, at age 54, while traveling in Illinois on a job, Burdess woke up unable to move his arms due to numbness. He sought medical treatment and was diagnosed with bilateral rotator cuff impingement and bilateral carpal and cubital tunnel syndrome. In May 2017, Burdess and his wife filed the present personal injury lawsuit alleging that Cottrell's chain and ratchet system was the cause of his injuries. Plaintiffs assert claims on theories of strict liability (*i.e.*, defective design) (Count I), negligence (Count II), breach of implied warranty (Count III), and loss

of consortium (Count IV). They also seek punitive damages for Cottrell's alleged disregard for employee safety in pursuit of profits (Count V).

Plaintiffs retained Gerald Micklow, Ph.D., to opine about the defects and hazards of the manual chain winch tie-down system on rigs such as Cottrell's. Dr. Micklow is a licensed engineer and professor of mechanical and civil engineering with 45 years' experience in the design and evaluation of advanced mechanical engineering systems and eight years' experience designing advanced aircraft for NASA. He is director of the Florida Center of Automotive Research and head of the graduate automotive engineering program at Florida Institute of Technology, where he has taught a capstone class on ergonomic design.

In his expert report (Doc. 134-2), Micklow explained that the chain winch tie-down system serves to compress the overall height of a trailer by pulling a car's chassis down against the compression force of its suspension springs. The driver inserts a steel bar into a ratchet head and pulls down with as much as 280 pounds of force to tighten the winch. Trailers carry up to fourteen vehicles, each having four tie-down points. Many tie-down locations on a trailer require two hands to generate the necessary force. The system provides no way to regulate the force exerted by the user repetitively, and there are no rails or other means to stabilize the body. The hazards and force levels are the same for tying and untying unless the system has a quick-release ratchet.

Micklow enumerated several problems with the design of chain winch tie-down systems, regardless of manufacturer. As relevant here, he opined that the direction and amount of force necessary to operate the system are damaging to the human musculoskeletal system and exceed recommended standards published by the National Institute for Occupational Safety and Health**.** Forces required to secure vehicles exceed the maximum set by the American Society of Testing and Materials.

Micklow indicated that many industry reports are critical of the system design, which he described as archaic in light of alternatives that have been available for decades. Micklow himself has designed alternatives using hydraulic, pneumatic, or electric power. He stated that Cottrell has been aware of the problem for many years, as evidenced by its participation in the 1979 Miller report documenting ratchet injuries. Micklow also cites a 1991 safety warning by William Warnick and other reports by Drury, Wolf, Carr, Mayne, Miller, Irvine, Weseman, and Leaseway, along with thousands of injury reports and summaries. Micklow opined that Cottrell's failure to adopt a safer alternative design was "beyond mere negligence" and further opined that the "archaic manual ratchet tie-down system design caused the injury to Mr. Burdess." (Doc. 134-2 at p. 8).

During his deposition, Micklow referred generally to his voluminous inventory of studies, articles, reports, videos, photographs, and other materials accumulated over decades on the subject of the chain and ratchet system, about which he has testified in numerous lawsuits. He has conducted several inspections of the type of trailer at issue here. (Doc. 153-3 at 54-55). He has personally tied down a three-quarter ton truck and measured the strain gauge. (*Id*. at p. 24). He also built a test rig – a ratchet system on a metal frame – to measure spring compression and required force. (*Id*. at 16). He has interviewed drivers and watched them load cars. (*Id*. at 45). He has reviewed hundreds of injury reports and summaries. (*Id*. at 48). Micklow cited the Human Factors Handbook recommending a maximum force of 50 to 60 pounds for overhead levers. (*Id*. at 7). He also cited the Carr study recommending a maximum overhead pull-down force of 120 pounds. (*Id*. at p. 12).

Micklow explained that, although he does not possess special certifications in ergonomics or biomechanics, he is essentially self-taught and teaches graduate students in these areas to the extent they intersect with mechanical engineering, as such considerations are factored into any

engineering design project involving human operators. (*Id*. at pp. 35-37, 63-64). Based on the literature, his expertise in mechanical engineering, and his acquired knowledge in ergonomics and biomechanics, Micklow opined that Burdess accumulated repetitive stress trauma from operating the ratchet system over time, culminating in his incapacity in April 2013. (Doc. 153-3 at p. 9). He understood that Burdess worked on Cottrell trailers from 2001 until the time of his injury but indicated that the specific type or manufacturer of trailer was irrelevant, as any trailer with a manual ratchet system would pose the same problem.

Cottrell moves to bar Micklow's testimony to the extent he opines that the ratchet system caused Burdess's injuries because (1) Micklow is not qualified as an expert in ergonomics or repetitive trauma injuries and (2) even if he were so qualified, his opinions are unreliable because they are not based on scientific evidence.

II. LEGAL STANDARDS

The admission of expert testimony in federal court is governed by Federal Rule of Evidence 702, which provides:

> A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:
>
> (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
>
> (b) the testimony is based on sufficient facts or data;
>
> (c) the testimony is the product of reliable principles and methods; and
>
> (d) the expert has reliably applied the principles and methods to the facts of the case.

Fed. R. Evid. 702.

The rule was amended in 2000 in response to *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579 (1993), which charged trial judges with a "gatekeeping" role to screen expert testimony for relevance and reliability. *Id*. at 590-93; *Russell v. Whirlpool Corp.*, 702 F.3d 450, 456 (8th Cir. 2012). To satisfy the relevance requirement, the proponent must show that the expert's

reasoning or methodology was applied properly to the facts at issue. *Barrett v. Rhodia, Inc.*, 606 F.3d 975, 980 (8th Cir. 2010). To satisfy the reliability requirement, the party offering the expert testimony must show by a preponderance of the evidence both that the expert is qualified to render the opinion and that the methodology underlying his conclusions is scientifically valid." *Id.*

A district court has "great latitude" in determining whether expert testimony meets the requisites of FRE 702." *Allen v. Brown Clinic, P.L.L.P.*, 531 F.3d 568, 573 (8th Cir. 2008). In ascertaining whether expert testimony will reliably aid the trier of fact, the Court should examine factors pertinent to the case, including whether the proposed expert sufficiently connects the proposed testimony with the facts of the case. *Presley v. Lakewood Eng'g & Mfg. Co.*, 553 F.3d 638, 643 (8th Cir. 2009)

The Court in *Daubert* emphasized that the inquiry required by FRE 702 is intended to be flexible. 509 U.S. at 594. Accordingly, the Eighth Circuit has held that expert testimony should be liberally admitted, with any doubts resolved in favor of admissibility. *Johnson v. Mead Johnson & Co., LLC*, 754 F.3d 557, 562 (8th Cir. 2014). Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence. *Daubert*, 509 U.S. at 596.

III. DISCUSSION

Cottrell seeks to exclude Micklow's opinion that Burdess suffered a repetitive trauma injury from operating its chain and ratchet system.

a. Qualifications

First, Cottrell argues that Micklow is not qualified as an expert in ergonomics or repetitive stress injury; rather he is a mechanical engineer primarily specialized in aeronautics who acquired

knowledge of car haulers solely to become an expert witness for litigation.

A designated expert can be qualified by knowledge, skill, experience, training, or education. Fed. R. Evid. 702. If an expert is qualified by experience, that experience must "bear a close relationship to the expert's opinion." *United States v. Ameren Missouri*, 4:11 CV 77 RWS, 2019 WL 1384631, at *1 (E.D. Mo. Mar. 27, 2019) (citing *Schmidt v. City of Bella Villa*, 557 F.3d 564, 571 (8th Cir. 2009)). Gaps in an expert witness's qualifications or knowledge generally go to the weight of the witness's testimony, not its admissibility. *United States v. Perry*, 61 F.4th 603, 606 (8th Cir. 2023) (deeming a forensic scientist qualified to testify on ballistics).

In *Torbit v. Ryder Sys., Inc.*, 2001 WL 36102782 (E.D. Mo. Sept. 24, 2001), this Court prohibited Micklow from testifying that excessive force levels caused task overstrain for drivers because the record did not establish Micklow's qualifications with respect to ergonomics or biomechanics. *Id*. at *2. Six years later, in *Gray v. Cottrell, Inc.*, 2007 WL 2360132 (E.D. Mo. Aug. 14, 2007), the Court found Micklow qualified to render such an opinion, noting his research and teaching in the ergonomics and biomechanics of car-hauling rigs. *Id*. at *2. *See also Taylor v. Cottrell*, 2014 WL 409186, at *3 (E.D. Mo. Feb. 3, 2014); *Stanley v. Cottrell, Inc.*, 2013 WL 466363, at *3 (E.D. Mo. Feb. 7, 2013); *Schuring v. Cottrell, Inc.*, 244 F. Supp. 3d 721, 729 (N.D. Ill. 2017), and *Hasan v. Cottrell, Inc.*, 2014 WL 4124254, at *3 (N.D. Ill. Aug. 21, 2014) (all recognizing Micklow as an expert in car hauler fall risks). Burdess submits additional unpublished rulings by various courts denying motions to exclude Micklow. (Doc. 153, Ex. 6, 11, 14-16, 18).

Here, in his deposition testimony, Micklow did not profess any degrees, certifications, or publications in ergonomics or biomechanics but explained that he acquired knowledge and experience in these disciplines by virtue of his work and instruction on mechanical engineering projects involving human operators over the course of 40 years, in addition to 25 years' experience

as an expert witness in litigation specifically related to the design of car haulers. Micklow testified at length regarding the design of the ratchet system, the levels of force required to operate it, his personal experience inspecting and even operating the system himself, and available safer alternatives.

The Court has reviewed Micklow's report, his list of sources, and his full deposition in this case. Based on the entirety of his knowledge and experience, the Court finds Micklow qualified to opine on the force levels and operator ergonomics and biomechanics required by the ratchet system, including his interpretation of industry literature and injury data. Cottrell will have an opportunity to explore the limits of his expertise on cross-examination.

However, the Court finds that Micklow is not qualified to render a causation opinion with respect to Burdess's injuries specifically because, in this Court's estimation, such an opinion requires medical expertise. Unlike *Miller* and *Gray* where the plaintiffs' injuries were attributable to a mechanical malfunction event within Micklow's expertise, Burdess's injury appears to have developed over time, concurrent with degenerative changes. Cottrell's motion will be granted in this respect.

b. Reliability

Cottrell also argues that Micklow's testimony is not reliable because (1) his expertise was developed for litigation and (2) Micklow did not know what rigs Burdess used, did not review his medical records, and could not identify Burdess's injuries. Plaintiff responds that Micklow's expertise and methodology are supported by voluminous industry data and literature utilized by other experts in non-litigation contexts. Plaintiff again notes the numerous rulings by other courts rejecting challenges to Micklow's qualifications and methods.

When assessing reliability, district courts consider (1) whether the methodology can or

has been tested; (2) whether the methodology has been subjected to peer review and publication; (3) the known or potential rate of error in the methodology; and (4) the methodology's general acceptance among the scientific community. *Gray*, 2007 WL 2360132, at *1 (citing *Daubert*, 509 U.S. at 593-94).

The Court sees no reason to discount the reliability of Micklow's testimony here solely by virtue of his experience as an expert witness. Micklow's deposition reflects that he has acquired considerable knowledge regarding the mechanics and operation of car-hauling rigs in both academic and litigation settings. His opinions are informed by industry and workplace literature, patent documents, reports and studies by other experts, hauler interviews and observations, injury data, and his own research and testing. *See Gray*, 2007 WL 2360132, at *2 (listing Micklow's sources and denying a motion to exclude him based on methodology). Based on these sources and methods, the Court finds reliable Micklow's opinions with respect to car hauler design, ratchet force levels, and operator usage.

To the extent Cottrell challenges Micklow's ability to attribute Burdess's injuries to a Cottrell rig as opposed to another model, Micklow does not purport to identify the rig independent of Burdess's account. Rather, he opines that all ratchet systems have the same defective design requiring excessive force levels. Micklow's opinion, based on the aforementioned sources and methods, is reliable in this respect. As the Court understands it, Burdess intends to identify Cottrell as the manufacturer of his particular rig through other evidence.

Finally, the Court agrees that any medical or causation opinion by Micklow with respect to Burdess's specific injuries would be unreliable regardless of whether Micklow reviewed Burdess's medical records. As previously stated, Micklow is not qualified to render such

opinions. Burdess must establish the nature and cause of his injuries through his medical experts.[1]

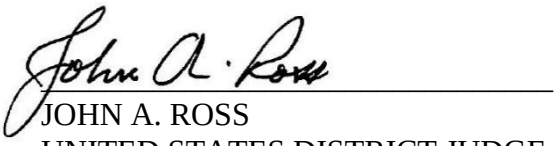
IV. CONCLUSION

The Court finds that Micklow's opinions will provide relevant and reliable information that will assist the jury in resolving the issues in this case. However, the Court will grant Cottrell's motion with respect to Micklow's opinion that Cottrell's ratchet caused Burdess's injuries.

Accordingly,

IT IS HEREBY ORDERED that Defendant Cottrell's motion to exclude the testimony of Dr. Gerald Micklow is **GRANTED in part and DENIED in part**. (Doc. 142).

Dated this 20th day of June, 2023.



JOHN A. ROSS
UNITED STATES DISTRICT JUDGE

[1] Though not raised in the present motion, Micklow also opines that Cottrell's failure to adopt safer alternatives to the chain and ratchet system was "beyond mere negligence." Any such testimony is inadmissible as a legal conclusion. *Cowden v. BNSF Ry. Co.*, 980 F. Supp. 2d 1106, 1122 (E.D. Mo. 2013).